

REMARKS

Claims 1-17 have been canceled. Claims 18-37 are presented for examination and Applicants have amended claims 18, 30 and 37. The Examiner has rejected claims 18 - 37. In view of the foregoing amendments and arguments, Applicants respectfully request reconsideration and allowance of the pending claims.

Response to Rejections Under §103(a):

The Examiner has rejected claims 18, 23-25, 28-35 and 37 under 35 U.S.C. §103(a) as being obvious over Twerdochlib et al. in view of Gray (USPN 4,131,889).

Applicants have amended claims 18, 30 and 37 to include the limitation of the reflection surface being arranged on a contoured airfoil surface of the blade or vane. Support for this limitation is found in the specification page 16 line 25 to page 17 line 6 along with figures 4 and 7 where the airfoil surface is described on page 16 lines 30-31 “..the contour shown in Figure 4, bent in a number of directions.”

Applicants respectfully submit that the cited prior art does not disclose or suggest this limitation. Twerdochlib et al. discloses reflecting a wave off of a blade tip, not an airfoil surface of the blade or vane as claimed by Applicants. (Col. 3, lines 33-36; Col. 4, lines 46-52; Col. 5, lines 46-55; and figures 4a, 4b, 5a and 5b). One of ordinary skill in the art would readily appreciate the significant difference between reflecting an electromagnetic wave off of a blade tip versus an airfoil surface as the blade tip can only provide information of the tip frequency due to tip vibration, whereas reflecting the electromagnetic wave off of the airfoil surface provides a multitude of information regarding the reflection surface. For example, reflecting an electromagnetic wave off of an airfoil surface would provide information regarding a reflection surface deflection shape as well as surface quality and blade frequency.

A patentable difference exists between the teaching of Twerdochlib et al. and the above limitation that is, Twerdochlib et al. has arranged the wave emitter such that it only detects the passing of a blade tip, and does not reflect an electromagnetic emission wave off of an airfoil surface of the blade or vane or match an electromagnetic emission wave to a surface form of the blade or vane. Applicants respectfully submit that amended independent claims 18, 30 and 37 are patentable over the prior art and therefore should be allowed.

In view of the above, Applicants respectfully contend that the combination of Twerdochlib et al. and Grey does not anticipate Applicants claimed invention as embodied in independent claims 18, 30 and 37. Dependant claims 19-22, 25-27, 34 and 36 are also patentable based on their dependency from independent claims 18 and 30 as well as on their own merit. In view of the above, Applicants respectfully request reconsideration and allowance of claims 18 - 37.

Conclusion

For the foregoing reasons, it is respectfully submitted that the rejections set forth in the outstanding Office Action are inapplicable to the present claims. All correspondence should continue to be directed to our below-listed address. Accordingly, Applicant respectfully requests that the Examiner reconsider the objections and rejections and timely pass the application to allowance. Please grant any extensions of time required to enter this paper. The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper, including fees for additional claims and terminal disclaimer fee, or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

Dated: December 20, 2007

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